Political Economy is only taught by the incumbent of the Chair of Moral Philosophy. The recommendations of the Inquiry Commissioners stated urgent wants of the Universities five years ago which would amount to much more than the added 25 per cent. now to be given to the Commissioners to settle upon the Universities for ever. It is true that Scotland is now both a rich and a liberal country, and that much may be expected in future from the direct contributions of her people. But experience has abundantly shown that private benevolence is never organised benevolence, and that sums which might in the aggregate be sufficient to meet all the most urgent wants of the Universities are not to be expected to be provided by voluntary contributions where or when they are most wanted. To reorganise the Scotch Universities, a liberal provision of public money is probably necessary, and it seems strange to throw the burden of such a provision on a fixed and moderate sum, which is declared to be for ever incapable of increase. It is not for us of course to consider whether Parliament would act wisely in placing the grants for the Scotch Universities on the annual estimates, where they are always open to comparison and challenge, or on the Consolidated Fund, where they are practically liable neither to increase nor to diminution. But it seems a strange policy to declare beforehand that the grants for objects which are admitted to be of national importance shall never exceed a severely limited sum. The demands of science alone are continually increasing in pecuniary severity, and we say no more than every one will admit when we add, that it is not for the public advantage that the natural teaching of science should be hindered in any of the three kingdoms by a too rigid or mechanical economy. It is not placing her in her true position to compel her to an undignified struggle with a host of other claimants for her fair share of a moderate allowance which cannot be increased. If the Scotch Universities had great College estates and ample revenues like Oxford and Cambridge, her claims might be met from time to time as they have been in England. Until of late years they have been very moderately provided institutions, and there are no available funds for the extensions of the future but the freewill offerings of her people. The State is, in our opinion, reasonably expected from time to time to organise, or to help to reorganise them in the interests of the nation. We should like to see it ready to do something more in that way than to offer to cut them adrift with a little extra money, and to provide Commissioners to whose absolute discretion is to be intrusted the reconstructive duties which naturally devolve on Parliament. The Oxford and Cambridge Act of 1877 gave the Commissioners then appointed very extensive powers, but it was in marked contrast, in the precision and fulness of its enacting clauses, and in the checks under which the Commissioners were to exercise their functions, to the Scotch Universities Bill of 1883.

THE SCHEME OF THE GROCERS' COMPANY FOR THE ENCOURAGEMENT OF ORIGINAL RESEARCH IN SANITARY SCIENCE

THE relation of man, whether savage or civilised, to his surroundings is one of constant exposure to influences which are hostile to his bodily well-being. Some of these are dangerous chiefly by reason of their insidiousness; others, although not concealed, are in their nature unavoidable; others, though both known and avoidable, are yet for various reasons not avoided. All of them, of whichever class, are subjects of earnest study to the pathologist, one part of whose science is for this reason called etiology as relating to the *causes of disease*, the other being concerned with the disturbances which these causes induce inside the living human organism. "Sanitary Science" in so far as it is a science, is identical with etiology, and is therefore a branch of pathology. In this sense it is the science on which the art of preventing disease, or "Preventive Medicine," as it is commonly called, is founded, and it will be admitted that, whatever doubt may exist as to the utility of exact knowledge of the nature of disease for its cure, there can be none as to its direct applicability to prevention.

The Grocers' Company, one of the oldest and most distinguished of the City Guilds and second to none in the liberality with which it has always bestowed its funds for the general good, has thought fit to create an endowment, or rather a system of endowments, for the encouragement of "Original Research in Sanitary Science." This it defines as relating to the "causes of important diseases and the means by which the respective causes may be prevented or obviated." The endowments which the Company have created are of two kinds. The one is intended "as maintenance for work in progress in fields of research to be chosen by the worker," the other as reward for actual discovery; the former intention being carried into effect by the establishment of three "Research Scholarships," each of 250*l*. a year, the latter by the appointment of a "Discovery Prize" of 1000*l*., to be given once in every four years. With a special view to the promotion of pathological study in the United Kingdom and its dependencies, the Scholarships are limited to British subjects who must be under thirty-five years of age; but in all other respects they are entirely open to persons *cujuscunque ordinis sive professionis*. Candidates are expected to state precisely the researches they propose to undertake, and are invited to refer, in support of their applications, to any work they may have in progress or may have published in the same or in any kindred field of study. In the appointment to Scholarships preference will be given to those candidates whose researches are judged likely to result in increase of knowledge of the "*Causation or Preventability of some important Disease or Diseases*." It is further provided that towards the close of his year of scholarship each scholar shall publish the result of his research or researches either in print, or, if desired, in a lecture to be delivered at Grocers' Hall or elsewhere.

The Quadrennial Discovery Prize is intended to reward original investigations, irrespectively of the country in which they may have been made, which shall have resulted in important additions to exact knowledge in particular (previously defined) subjects. The subject for the first Discovery Prize will be announced in May next, and the award will be made in May, 1887, when a further subject for investigation will be proposed. Any treatise which the candidate may have published, whether in England or in any other country, at any time during the period allowed, will be accepted as a competition-treatise,

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provided that the author has duly declared himself a candidate. Every treatise must be in print and in the English language, and must bear the name of its author. It seems to be contemplated that some definite problem will always be involved in the subject announced, the solution of which will be considered as the essential condition of success. But if it shall appear that although this has not been accomplished any candidate has made valuable progress towards its accomplishment, or has even incidentally made some discovery of practical importance, the merits of such candidate will be recognised by the award of a part of the sum offered.

Such is the scheme; we think it will be generally regarded as well adapted for the accomplishment of the end proposed. The objections to which it is liable are exclusively those which are applicable to all similar schemes for the encouragement of research by pecuniary endowment.

To the Discovery Prize we attach less value than to the other. In the natural sciences discoveries are usually made by men to whom the prospect of a reward, however munificent, would not be a sufficiently strong reason to induce them to change the course or purpose of their investigations. It is the consideration of this fact, no doubt, which has led the Company, we think very wisely, to determine to accept published researches in competition; but here the difficulty at once arises, for the discovery must relate to a particular question previously announced. How will the selection of this question be made?

It is clearly desirable that on each occasion the problem selected should be one which will certainly meet with its solution during the next four years—and therefore one as to which investigation is already in progress. To anticipate what will and must soon be discovered is half way towards discovery, and consequently demands, on the part of the individuals intrusted with the selection, powers at least equal to those which it is proposed to recognise in the bestowal of the prize. Nothing could be better than that Prof. Tyndall, Mr. Simon and the other scientific advisers of the Company should have the opportunity given them, or rather the duty imposed upon them, of publishing these forecasts of the probable progress of knowledge in relation to the causes of disease, for, even if their prognostications serve no other purpose, they will at least be of use in directing inquiry into the most promising channels.

The more important division of the scheme—that which relates to the scholarships—is open to no objections of the kind referred to above. Its purpose is simple, and the way in which it is proposed to carry it out effectual. It is of course quite as impossible to make a worker of a man by giving him a scholarship as to make a discoverer of him by offering him a prize, but there is this difference between the two cases, that the endowment *enables*, the prize only *rewards*. The scholarships are limited to candidates under thirty-five. Among men of this age who are now working at pathology in this country we may be sure that there are some who are doing so, if one may so express it, at the cost of life, for they are devoting to investigations which certainly will not pay, time which could otherwise be spent with direct advantage to themselves; and that there are among such men some at least who are fitted by nature to undertake the work of investigation, and have the additional qualifications afforded by training in scientific methods. Their number is no doubt very inconsiderable, for pathology as a science is of very recent birth. It is the offspring of physiology, and has only just arrived at such a stage of development as to claim an independent position. By reason of its being in this evolutionary condition it happens in pathology, as in all other sciences during the initial stage of their growth, that the more work is done the more is required—the completion of each bit of research only preparing the way for fresh investigations. New methods, new applications of physical, chemical, or physiological knowledge to the problems which relate to the causes of disease, are being brought within reach of the pathological worker every year, but all of these require *work* to make them fruitful. There is therefore not the least reason for apprehending that there will be any difficulty in finding subjects for future inquiries. It is far more doubtful whether the men possessing the qualifications which have been already indicated will be forthcoming. At first, if we are not mistaken, the choice will be very restricted, but each year will bring an accession of strength to the ranks of the competitors, so that if in the first instance the Company should be advised for want of suitable applicants to allow one or more of their scholarships to remain vacant, they will act wisely in delaying the appointment.

We do not think that the difficulty will arise, for the tide has already turned. Practical medicine, which has hitherto been strangely indifferent to the science on which it professes to be founded, is awakening to the importance of scientific investigation of the cause and nature of diseases. Among indications of the change may be mentioned the origin and successful progress of the new "Association for the Advancement of Medicine by Research,'' which has begun its function by devoting its funds to an inquiry into the etiology of tuberculosis. Another fact of equal moment as indicating the recognition of pathology as a special subject of study, is the intended establishment of a Professorship of the science in the University of Cambridge—an example which will no doubt soon be followed by the sister University. When this shall have been accomplished it may be hoped that the great educational institutions which are attached to Guy's, Bartholomew's, and St. Thomas's Hospitals may be also induced to follow the example of the Worshipful Company of Grocers, by doing something more than they have done hitherto to encourage and provide for "the making of exact researches into the causes of important diseases and the means whereby these causes may be prevented or obviated."

ELEMENTARY METEOROLOGY

Elementary Meteorology. By R. H. Scott, M.A., F.R.S., Secretary to the Meteorological Council. (London: Kegan Paul, Trench, and Co., 1883.)

MR. SCOTT'S aim in this text-book of meteorology is to explain the conditions required for the successful prosecution of the science, and to show in some detail the more prominent of the results which have already been arrived at. The various instruments are

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